

CLAIMS

1. An exhaust gas aftertreatment system for an internal combustion engine exhaust, the system comprising:

- 5 an Active Lean NOx catalyst (ALNC);
 an oxidation catalyst coupled downstream of said ALNC; and
 a selective catalytic reduction (SCR) catalyst coupled downstream of said oxidation catalyst.

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2. The system as set forth in Claim 1 wherein the internal combustion engine exhaust is a diesel engine exhaust.

- 15 3. The system as set forth in Claim 2 further comprising a particulate filter coupled downstream of said SCR catalyst.

4. The system as set forth in Claim 3 further comprising
20 a first reductant injection system adapted to inject hydrocarbon into an exhaust gas stream entering said ALNC.

5. The system as set forth in Claim 4 further comprising
25 a second reductant injection system adapted to inject aqueous urea into an exhaust gas stream entering said SCR catalyst.

6. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx catalyst (ALNC), comprising:

5 providing an indication that the ALNC temperature is above a first predetermined temperature; and
in response to said indication controlling the temperature of the oxidation catalyst by
10 adjusting an amount of reductant in an exhaust gas mixture entering the ALNC.

7. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx

15 catalyst (ALNC) during cold start, comprising:
providing an indication that the ALNC temperature is above a first predetermined temperature; and
in response to said indication adjusting an
20 amount of reductant in an exhaust gas mixture entering the ALNC thereby raising the temperature of the oxidation catalyst above a second predetermined temperature.

25 8. A method for controlling a temperature of an oxidation catalyst coupled downstream of an Active Lean NOx catalyst (ALNC) during cold start, comprising:

injecting a predetermined amount of reductant into an exhaust gas stream entering the ALNC
30 when the oxidation catalyst temperature is above a predetermined temperature; and

increasing reductant injection into the ALNC
thereby causing the oxidation catalyst
temperature to reach said predetermined
temperature otherwise.

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9. An exhaust gas aftertreatment system for an internal
combustion engine exhaust, the system comprising:
an Active Lean NOx catalyst (ALNC); and
a selective catalytic reduction (SCR) catalyst
coupled downstream of said oxidation catalyst.

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10. An emission control system, comprising:
an internal combustion engine;
an Active Lean NOx (ALNC) catalyst coupled
downstream of said engine;
an oxidation catalyst coupled downstream of
said ALNC;
a urea-based SCR catalyst coupled downstream of
said oxidation catalyst; and
a computer storage medium having a computer
program encoded therein, comprising:
code for providing an indication that said
SCR catalyst is degraded; and in response
to said indication, discontinuing urea
injection into said SCR catalyst and
injecting a predetermined amount of
reductant into an exhaust gas stream
entering said ALNC wherein said
predetermined amount of reductant is based
on an amount of NOx in said exhaust gas
mixture entering said ALNC.

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